

SEQUENCE LISTING



<110> Ferby, Ingvar  
Nebreda, M. Angel

<120> Protein with cell proliferation and cell division  
modulating activity and DNA encoding such protein

<130> 2923-497

<140> US 09/889592

<141> 2001-08-02

<150> PCT/EP00/00877

<151> 2000-02-03

<150> EP 99102172.6

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<170> PatentIn Ver. 2.1

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atcaaccctc gggccggtgt ccccttttct aca atg agg cac atg cag agt gta 234
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Thr Arg Ala Ser Ser Ile Cys Gly Ser Gly Val Lys Gln Val Ile Gly
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| Glu | Asn | Glu | Gln | Ile | Gln | Glu | Phe | Leu | Ser | Met | Asp | Ser | Cys | Leu | Arg |      |
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| Ala | Leu | Tyr | Leu | Ala | Asn | Asp | Met | Glu | Glu | Asp | Glu | Glu | Asp | Tyr | Lys |      |
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| Tyr | Glu | Ile | Phe | Pro | Trp | Ala | Leu | Gly | Asp | Ser | Trp | Arg | Glu | Leu | Phe |      |
|     |     |     |     | 140 |     |     |     |     | 145 |     |     |     |     | 150 |     |      |
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| Pro | Gln | Phe | Leu | Arg | Leu | Arg | Asp | Asp | Phe | Trp | Ala | Lys | Met | Asn | Tyr |      |
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| cga | gca | gtt | gtt | agt | cga | agg | tgc | tgt | gat | gag | gta | atg | tcc | aaa | gat | 762  |
| Arg | Ala | Val | Val | Ser | Arg | Arg | Cys | Cys | Asp | Glu | Val | Met | Ser | Lys | Asp |      |
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| Pro | Thr | His | Trp | Ala | Trp | Leu | Arg | Asp | Arg | Pro | Met | His | His | Ser | Gly |      |
|     | 185 |     |     |     |     | 190 |     |     |     |     | 195 |     |     |     |     |      |
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| Pro | Gly | Leu | Thr | Pro | Ala | Ser | Cys | Thr | Leu | Cys | His | Lys | Ala | Gly | Val |      |
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| Cys | Asp | Ser | Gly | Gly | Val | Ser | His | Asn | Asn | Ser | Ser | Ser | Pro | Glu | Gln |      |
|     |     |     | 235 |     |     |     |     | 240 |     |     |     |     | 245 |     |     |      |
| gag | att | ttt | cac | tac | acc | aat | agg | gag | tgg | tcc | cag | gag | ctt | ctc | atg | 1002 |
| Glu | Ile | Phe | His | Tyr | Thr | Asn | Arg | Glu | Trp | Ser | Gln | Glu | Leu | Leu | Met |      |
|     |     | 250 |     |     |     |     | 255 |     |     |     |     | 260 |     |     |     |      |
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 Glu Trp His His Leu  
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 Met Arg His Met  
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| Arg | Ile | Thr | His | Leu | Asn | Leu | Gln | Pro | Gln | Glu | Arg | Gln | Ala | Phe | Tyr |     |
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| agg | ctc | cta | gaa | aat | gag | ctg | att | cag | gaa | ttt | ctt | tct | atg | gac | tcc | 414 |
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| tgt | cta | aag | att | tca | gac | aag | tat | ctc | ata | gca | atg | gtt | cta | gca | tat | 462 |
| Cys | Leu | Lys | Ile | Ser | Asp | Lys | Tyr | Leu | Ile | Ala | Met | Val | Leu | Ala | Tyr |     |
|     | 85  |     |     |     | 90  |     |     |     |     | 95  |     |     |     |     | 100 |     |
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| Phe | Lys | Arg | Ala | Gly | Leu | Tyr | Thr | Ser | Glu | Tyr | Thr | Thr | Met | Asn | Phe |     |
|     |     |     |     | 105 |     |     |     |     | 110 |     |     |     |     | 115 |     |     |
| ttt | gtt | gct | ctg | tat | ctg | gct | aat | gac | atg | gag | gaa | gat | gaa | gaa | gac | 558 |
| Phe | Val | Ala | Leu | Tyr | Leu | Ala | Asn | Asp | Met | Glu | Glu | Asp | Glu | Glu | Asp |     |
|     |     |     | 120 |     |     |     |     | 125 |     |     |     |     | 130 |     |     |     |
| tat | aaa | tat | gaa | atc | ttc | ccc | tgg | gca | cta | gga | gat | tca | tgg | cgt | gag | 606 |
| Tyr | Lys | Tyr | Glu | Ile | Phe | Pro | Trp | Ala | Leu | Gly | Asp | Ser | Trp | Arg | Glu |     |
|     |     | 135 |     |     |     |     | 140 |     |     |     |     | 145 |     |     |     |     |
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| Phe | Phe | Pro | Gln | Phe | Leu | Arg | Leu | Arg | Asp | Asp | Phe | Trp | Ala | Lys | Met |     |
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| Asn | Tyr | Arg | Ala | Val | Val | Ser | Arg | Arg | Cys | Cys | Asp | Glu | Val | Met | Ala |     |
|     | 165 |     |     |     | 170 |     |     |     |     | 175 |     |     |     |     | 180 |     |
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| Lys | Asp | Pro | Thr | His | Trp | Ala | Trp | Leu | Arg | Asp | Arg | Pro | Ile | His | His |     |
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| agt | ggg | gcc | ctg | cgt | ggt | tac | ctc | aga | aat | gag | gat | gac | ttt | ttc | cct | 798 |
| Ser | Gly | Ala | Leu | Arg | Gly | Tyr | Leu | Arg | Asn | Glu | Asp | Asp | Phe | Phe | Pro |     |
|     |     | 200 |     |     |     |     |     | 205 |     |     |     |     | 210 |     |     |     |
| cgg | ggt | cca | ggc | ctt | aca | cca | gcc | agc | tgt | gca | ctt | tgc | cat | aaa | gca | 846 |
| Arg | Gly | Pro | Gly | Leu | Thr | Pro | Ala | Ser | Cys | Ala | Leu | Cys | His | Lys | Ala |     |
|     |     | 215 |     |     |     |     | 220 |     |     |     |     | 225 |     |     |     |     |
| agt | gtc | tgt | gac | tct | ggt | ggg | gtg | tcc | cat | gac | aac | tct | tct | cca | gaa | 894 |
| Ser | Val | Cys | Asp | Ser | Gly | Gly | Val | Ser | His | Asp | Asn | Ser | Ser | Pro | Glu |     |
|     | 230 |     |     |     |     | 235 |     |     |     |     | 240 |     |     |     |     |     |
| caa | gag | att | ttt | cac | tac | acc | aat | agg | gag | tgg | tcc | cag | gaa | ctt | ctc | 942 |
| Gln | Glu | Ile | Phe | His | Tyr | Thr | Asn | Arg | Glu | Trp | Ser | Gln | Glu | Leu | Leu |     |
|     | 245 |     |     |     | 250 |     |     |     | 255 |     |     |     |     |     | 260 |     |
| atc | ttg | cca | cct | gaa | ctg | tta | ttg | gat | ccg | gag | tct | act | tat | gac | atc | 990 |
| Ile | Leu | Pro | Pro | Glu | Leu | Leu | Leu | Asp | Pro | Glu | Ser | Thr | Tyr | Asp | Ile |     |

265

270

275

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 Leu Glu Trp His His Leu  
           295

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 Gln Ala Phe Tyr Arg Leu Leu Glu Asn Glu Gln Ile Gln Glu Phe Leu  
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 Ser Met Asp Ser Cys Leu Arg Ile Ser Asp Lys Tyr Leu Ile Ala Met  
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 Val Leu Ala Tyr Phe Lys Arg Ala Ala Gly Leu Tyr Thr Ser Glu Tyr  
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 Thr Thr Met Asn Phe Phe Val Ala Leu Tyr Leu Ala Asn Asp Met Glu  
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|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
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| Asp | Ser | Trp | Arg | Glu | Leu | Phe | Pro | Gln | Phe | Leu | Arg | Leu | Arg | Asp | Asp | 145 | 150 | 155 | 160 |
| Phe | Trp | Ala | Lys | Met | Asn | Tyr | Arg | Ala | Val | Val | Ser | Arg | Arg | Cys | Cys | 165 | 170 | 175 |     |
| Asp | Glu | Val | Met | Ser | Lys | Asp | Pro | Thr | His | Trp | Ala | Trp | Leu | Arg | Asp | 180 | 185 | 190 |     |
| Arg | Pro | Met | His | His | Ser | Gly | Ala | Met | Arg | Gly | Tyr | Leu | Arg | Asn | Glu | 195 | 200 | 205 |     |
| Asp | Asp | Phe | Phe | Pro | Arg | Gly | Pro | Gly | Leu | Thr | Pro | Ala | Ser | Cys | Thr | 210 | 215 | 220 |     |
| Leu | Cys | His | Lys | Ala | Gly | Val | Cys | Asp | Ser | Gly | Gly | Val | Ser | His | Asn | 225 | 230 | 235 | 240 |
| Asn | Ser | Ser | Ser | Pro | Glu | Gln | Glu | Ile | Phe | His | Tyr | Thr | Asn | Arg | Glu | 245 | 250 | 255 |     |
| Trp | Ser | Gln | Glu | Leu | Leu | Met | Leu | Pro | Pro | Glu | Leu | Leu | Leu | Asp | Pro | 260 | 265 | 270 |     |
| Glu | Cys | Thr | His | Asp | Leu | His | Ile | Leu | Gln | Glu | Pro | Leu | Val | Gly | Leu | 275 | 280 | 285 |     |
| Glu | Pro | Asp | Gly | Thr | Ala | Leu | Glu | Trp | His | His | Leu |     |     |     |     | 290 | 295 | 300 |     |

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| Met | Arg | His | Met | Gln | Ser | Ala | Thr | Arg | Ala | Thr | Leu | Val | Cys | Gly | Ser | 1  | 5  | 10 | 15 |
| Gly | Val | Lys | Gln | Ile | Ile | Ala | Lys | Gly | His | Pro | Asn | Thr | Arg | Val | Phe | 20 | 25 | 30 |    |
| Gly | Ala | Arg | Lys | Ala | Lys | Ile | Pro | Glu | Arg | Glu | Val | Leu | Ala | Ala | Lys | 35 | 40 | 45 |    |
| Pro | Lys | Ile | Thr | Arg | Ile | Thr | His | Leu | Asn | Leu | Gln | Pro | Gln | Glu | Arg | 50 | 55 | 60 |    |
| Gln | Ala | Phe | Tyr | Arg | Leu | Leu | Glu | Asn | Glu | Leu | Ile | Gln | Glu | Phe | Leu | 65 | 70 | 75 | 80 |
| Ser | Met | Asp | Ser | Cys | Leu | Lys | Ile | Ser | Asp | Lys | Tyr | Leu | Ile | Ala | Met | 85 | 90 | 95 |    |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Val | Leu | Ala | Tyr | Phe | Lys | Arg | Ala | Gly | Leu | Tyr | Thr | Ser | Glu | Tyr | Thr | 100 | 105 | 110 |
| Thr | Met | Asn | Phe | Phe | Val | Ala | Leu | Tyr | Leu | Ala | Asn | Asp | Met | Glu | Glu | 115 | 120 | 125 |
| Asp | Glu | Glu | Asp | Tyr | Lys | Tyr | Glu | Ile | Phe | Pro | Trp | Ala | Leu | Gly | Asp | 130 | 135 | 140 |
| Ser | Trp | Arg | Glu | Phe | Phe | Pro | Gln | Phe | Leu | Arg | Leu | Arg | Asp | Asp | Phe | 145 | 150 | 155 |
| Trp | Ala | Lys | Met | Asn | Tyr | Arg | Ala | Val | Val | Ser | Arg | Arg | Cys | Cys | Asp | 165 | 170 | 175 |
| Glu | Val | Met | Ala | Lys | Asp | Pro | Thr | His | Trp | Ala | Trp | Leu | Arg | Asp | Arg | 180 | 185 | 190 |
| Pro | Ile | His | His | Ser | Gly | Ala | Leu | Arg | Gly | Tyr | Leu | Arg | Asn | Glu | Asp | 195 | 200 | 205 |
| Asp | Phe | Phe | Pro | Arg | Gly | Pro | Gly | Leu | Thr | Pro | Ala | Ser | Cys | Ala | Leu | 210 | 215 | 220 |
| Cys | His | Lys | Ala | Ser | Val | Cys | Asp | Ser | Gly | Gly | Val | Ser | His | Asp | Asn | 225 | 230 | 235 |
| Ser | Ser | Pro | Glu | Gln | Glu | Ile | Phe | His | Tyr | Thr | Asn | Arg | Glu | Trp | Ser | 245 | 250 | 255 |
| Gln | Glu | Leu | Leu | Ile | Leu | Pro | Pro | Glu | Leu | Leu | Leu | Asp | Pro | Glu | Ser | 260 | 265 | 270 |
| Thr | Tyr | Asp | Ile | His | Ile | Phe | Gln | Glu | Pro | Leu | Val | Gly | Leu | Glu | Pro | 275 | 280 | 285 |
| Asp | Gly | Ala | Ala | Leu | Glu | Trp | His | His | Leu |     |     |     |     |     |     | 290 | 295 |     |